

The Effects of School Bonds, Discipline Techniques in School and Victimization on Delinquency of High School Students

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Abstract

Delinquency has become an import social problem in Turkey, especially in schools. Along with this trend, empirical studies have started to pay attention to delinquent acts in schools. However, most of these studies have mainly focused on the nature and prevalence of the delinquent behaviors. There are limited numbers of studies that explore relationships between school related factors and delinquency among Turkish students. Thus, the main purpose of the present study is to examine how various delinquent behaviors (property delinquency, violent behavior, delinquency in school and substance use) are related to some school related factors such as school bonds (attachment to teacher and commitment to school), discipline techniques used in schools (coercive and inductive discipline) and victimization in the school. For this, a total of 3742 students from 11 high schools in İzmir were chosen through stratified cluster sampling techniques. The mean age of the sample was 16.8 and percentage of male students was 52. Self-report instruments used in previous studies were mainly adapted to measure school-related variables and various delinquent involvements. Due to the censored nature of dependent variables (delinquent involvements), Tobit regression techniques were used in analysis. The analysis revealed that commitment to school had an effect in the reduction of all kinds of delinquent acts that are assessed in this study. Results also indicated that coercive discipline techniques and victimization in schools were positively related to delinquent involvements regardless of the nature of delinquency. Overall, findings have confirmed that schools should be considered as an important social context along with family, communities or neighborhood that also affect various processes related to delinquency.

Key Words

Delinquency, School Commitment, Coercive Discipline, Victimization in School, Tobit Model.

Violent and non violent delinquency in schools has been considered as a serious problem in most of the developed countries for a long time. Responses to this problem, numerous theoretical discussions or empirical studies that mainly took place in Western contexts have focused on delinquent involvements of students which have helped some way to improve the social and educational policies

that aimed to reduce the delinquency in schools (Cernkovich & Giordano, 1992; Payne, 2004; Welsh, Greene, & Jenkins, 1999). Delinquency, especially in schools, has also become an important social problem in developing countries. Due to the rapid changes in the economic and social structure and increase in the enrolment rates, delinquency among students has become a serious problem in Turkey. Studies conducted recently have shown that various delinquent behaviors such as violence, bullying, substance use are frequently observed among students regardless of their levels of study (Alikasıfoğlu et al., 2004; Baş & Kabasakal, 2010; Bilgiç & Yurtal, 2009; Çalık, Özbay, Erkan, Kurt, & Kandemir, 2009; Demir, Baran & Ulusoy, 2005; Demirtaş & Ersözlu, 2007; Durmuş & Gürkan, 2005; Erdoğan, 1993; Kepenekçi & Çinkır, 2006;

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Ögel, Taner, & Eke, 2006; Özbay, 2003; Özönder, Sağlam, Aksoy, Uluocak, & Köktürk, 2005; Ulusoy, 2006; Ulusoy, Demir & Baran, 2005). Also, the Turkish government has started to take this problem seriously. For example, a nationwide Symposium on Violence in School and a panel research for schools delinquency under the supervision of the parliament was organized. Therefore, there is a need to study school contexts to understand delinquent involvements more thoroughly in Turkish context. In this context, the present study was designed to examine how various delinquent behaviors (property, violence, delinquency in school and substance use) are related to some school related factors such as school bonds, discipline techniques used in school and victimization in schools.

The responsibility of the school is not only to teach the educational and cognitive skills to young people but also to transfer social values and the appropriate social behaviors to them. The school also helps students to become independent and responsible adults. At the same time, the school requires students to obey the rules and to live up to expectations. Previous studies that mainly conducted in developed Western countries have showed the linkage between various aspects of school context and delinquency. Especially, school bonds which may have an influence on inhibiting the involvement in delinquency were the focus of the many studies (Stewart, 2003; Zhang & Messner, 1996). In this line of research, commitment to school, obedience to school rules, academic failure, deviant peers and various school problems were other important school variables that related to delinquency (Cohen, 1955; Crosnoe, 2006; Hirschi, 1969; Jenkins, 1995; Liska & Reed, 1985; Payne, Gottfredson & Gottfredson, 2003; Ring & Svensson, 2007; Welsh, 2001; Welsh, Stokes & Greene, 2000).

School Bonds

Although there are various arguments about how the school is related to delinquency in literature, Social Bond Theory (Hirschi, 1969) has a great importance to explain this relationship. According to Hirschi (1969), individuals are tied to a society through conventional ties formed in social contexts such as family, peers and school. Bonds to conventional institutions discourage the delinquent motivation and promote compliance with social rules. Hirschi (1969) identifies four social bonds; attachment to others, commitment, involvement and belief. One domain in which individual's social bonds is formed is school. Attachment refers

to affective ties formed to significant others; those who young people care about their opinions and expectations. Attachment to significant others has an important role to inhibit delinquency because they do not want to risk the relationship with others by engaging in these types of behaviours (Hirschi, 1969; Jenkins, 1995). In the school environment, teachers, who play an important role to transfer the conventional norms of society and appropriate social behaviors, especially become role models to students (Cernkovich & Giordano, 1992; Crosnoe, Johnson, & Elder, 2004). When the relationship between the students and the teachers are open, warm, supportive and caring, the students feel close to their teachers, so that teachers' opinions and expectations become very important for students. Strong ties to teacher will discourage the involvement in delinquency by raising the costs that are associated with it (Crosnoe, 2006; Erickson, Crosnoe, & Dornbusch, 2000; Fowler, Banks, Anhalt, Der, & Kalis, 2008; Jenkins, 1995; Meenhan, Hughes, & Cavell, 2003; Stewart, 2003; Welsh et al., 1999).

Along with attachment to the teachers, commitment to schools could also increase students' bonding to school. As Hirschi (1969) put it, commitment is considered as individuals' rational investments and efforts for things (job, education, etc.) that are important for them and it provides a required mechanism for forming bonds with society and culturally accepted values. Therefore, committed individuals accept the conventional ways to reach success, so that they will less likely to get involved in delinquent acts. In this context when young people see education as a promising way to achieve their goals (nice jobs, money, prestige, etc.); they would not want to lose their investment or valued goals by engaging in delinquent act in schools. They would be more likely to accept the conventional ways to achieve success such as educational achievement and as a result they will less likely commit delinquency (Cernkovich & Giordano, 1992; Erickson et al., 2000; Jenkins, 1995; Welsh, et al., 1999, Zhang & Messner, 1996). Even though we could not find any study examining the relationship between school bonds and delinquents acts among Turkish students, some studies related to the subject area also supported this lineage. For example, studies related to bullying and violence have shown that school climate (Çalık, et al, 2009; Demirtaş & Ersözülü, 2007), class climate (Bilgiç & Yurtal, 2009) and expectations from education (Özbay, 2003) are related to various delinquent behaviors. Therefore, based on previous

findings and theoretical arguments, it was expected that students who are attached to their teachers would less likely engage in delinquent behaviors. Similarly, students who have commitment to their schools would more less likely act delinquently.

Discipline Techniques and Victimization in School

School is responsible to teach norms and values of society and control the behavior of young people. To achieve this goal, discipline techniques are used to correct the undesired or wrong behaviors of individuals. However, sometimes discipline techniques might encounter difficulties to accomplish these goals. Especially, ineffective method used in this process could put students at risk of committing delinquency. Previous studies have generally shown that schools with serious disciplinary problems have the higher rates of delinquency or antisocial behavior than other schools (Payne et al., 2003; Sprague, Walker, Stieber, Simonson, & Nishio, 2001). For example, in their review article, Skipa and Peterson (2000) have pointed out that harsh, coercive discipline techniques were not able to correct the misbehaviors of students. Some of the studies conducted in Turkey revealed that coercive discipline techniques such as shouting, hitting, calling bad names, are still commonly used by the teachers or managers (Deveci, Aık, & Ayar, 2007; Gztok Karacaolu, & Er, 2007; Trkiye Byk Millet Meclisi [TBMM], 2007). ukur and Kuru (2007) also pointed out that there is an important cultural difference between students and teachers in high schools; where students are more likely to resolve conflicts through dominance whereas teachers are more likely to avoid conflicts. Skipa and Peterson (2000) suggest that discipline techniques should be more inclusive of the students in order to create a more positive and safe school environment. Studies on families have also revealed that inductive discipline techniques are much better to correct the misbehavior than coercive techniques (Heimer, 1997). When teachers and administrators use the inductive discipline strategies such as reasoning, school setting can become less risky and tense and that would be helpful to deal with delinquency.

Another important yet understudied school related factor is, victimization in school. Students' risk of being exposed to various negative life experiences such as victimization by other students has also

become a problem in Turkish school. For example, some of the recent findings indicated that students are frequently victims of bullying or are exposed to various forms of deviant acts (TBMM, 2007; Bilgi & Yrtal, 2009; Kepeneki & ınkır, 2006). Also, findings of studies based on various theoretical perspectives have suggested that there is an association between victimization and delinquency (DuRant, Cadenhead, Pendergrast, Slavens, & Linder, 1994; Sampson & Lauritsen, 1990; Spano & Bolland, 2006). Sometimes students could not avoid the victimization through legitimate ways. In turn, delinquency can be the way to deal with these problems. In the light of previous theoretical debates and findings, using inductive discipline techniques more frequently in schools would be associated with less delinquency. On the contrary, using coercive discipline techniques and being the victim of delinquent acts in school more frequently would increase the possibility of involvement in delinquency.

Method

Sample

The data for this study was collected as part of the study that investigates various delinquent behaviors among high school students. The sample was stratified based on the school type- public, public vocational and private high schools. We surveyed 4150 high school students from 11 high schools between 2008 and 2009 in Izmir, which is the third largest city in Turkey. Due to incomplete data (e.g. missing variables across all measures, missing across the major socio-demographic variables, answers out of formatted response categories, etc.), data of 408 high students were not included in the analysis. The remaining participants were 3742 high school students. Students represent the students from 9th to 12th grades (9th = 40%, 10th = 30, 6%, 11th = 22% and 12th=7%). The sample consisted of 52% of male and 48% of female students. The age of participants ranged between 14 and 20 with an average of 16.8 (SD = 1.16). The family incomes of the students represent a wide range of income groups (varying 100 through 10000 Turkish Lira) with a mean of 1709 TL (SD = 1313).

Procedure

The approval of Institutional Ethic Board of the University and Turkish Minister of Education were obtained before collecting data. Trained research

assistants distributed and collected questionnaires which were self-administrated and anonymous. It took the students approximately 45 minutes to fill out the self-reported survey.

Measurements

The self-administrated survey include the various scales developed and adopted during the study; attachment to the teacher, commitment to school, discipline techniques used in school, victimization by other students and delinquency. Also it includes questions about socio-demographic variables. The scales in English were translated by a professional team and double check translation techniques used to check the quality of the translation. A pilot study with 500 high school students was also carried out to give the final version of measurements.

Delinquency Scales

A self-report delinquency checklist asking about various delinquent behaviors was mainly adapted from National Youth Survey (NYS) (Elliot, Huizinga, & Ageton, 1985) and Richmond Youth Project (Hirschi, 1969). Students answered how many times they committed the given delinquent activities in the past 12 months using a five point scale ranging 0 (Never) to 5 (four or more times). The Total number of questions was 32. The items were classified as four subscales of delinquency based on previous studies: property and violent delinquency, delinquency in school and substance use (Cernkovich & Giordano, 1992; Gutierrez & Shoemaker, 2008; Hirschi, 1969; Liska & Reed, 1985). Coefficients of alphas (α) were reported at end of each subscale.

Property Delinquency: This subscale included a total of 12 items that mainly ask delinquency involvements against properties. For example, taking money from home without the permission of the family members, to steal things with little value, trying to steal a car and vandalizing others' properties are some of items used to measure property delinquency. The items were summed to create property delinquency index (subscale) which ranges from 0 to 48 ($\alpha = .93$).

Violent Delinquency: To measure violent delinquency, 9 items such as gang fighting, carrying a weapon and to attack someone in order to injure them are used. These items were summed to create an index of violent delinquency which ranges from 0 to 36 ($\alpha = .86$).

Delinquent Activities in School: This category includes both students' behavior against the school order and the property and violent delinquent activities of students in the school. Some these behaviors are "I behave against the rules in the class", "I called the principles' office because of the trouble I caused", "I vandalize the school property" and "I threatened to hit other students". The 8 items were summed to crease delinquency in school index which ranges from 0 to 32 ($\alpha = .82$).

Substance Use: This is measured by 3 items; cigarette, alcohol and drug use. These items were summed to create an index of substance use. The index range is from 0 to 12 ($\alpha = .60$).

Attachment to Teachers

The items to measure attachment to teachers were adopted from Richmond Youth Project (Hirschi, 1969). Attachment to teachers is measured by 7 items based on the students' reports of the relationship with their teachers. Some of these items were; "Our teachers care about us", "I can talk about my school problems with my teachers", "Our teachers treated students fairly", "Our teachers are working hard to make us succeed". Students were asked to respond on a five point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Higher values indicate stronger attachments to teachers ($\alpha = .82$).

School Commitment

Commitment to the school measure was adapted from Jenkins' scales (1995). Students were asked how they evaluate the school with a total of 9 items. Some of questions were: "School is helping me to be ready for my future", "School will help me to get a good job in the future", "I am attending the school because I like what I learn in the class", "It is important to finish up my homework on time", "School is a waste of time", "I am attending the school because my parents want me to". The respondents indicated their answer on a five point Likert scale ranging from 1 (Strongly Disagree) 5 (Strongly Agree). Some of the items were reversed coded to be consistent with other items and higher values indicate more strong commitment to school ($\alpha = .82$).

Discipline Techniques

Discipline techniques measures were adopted from NYS which had questions about parents' discipline

Table 1.
Mean and Standard Deviation of Main Variables and Bivariate Correlations Among Main Variables

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Log Property del	.50	.87	1.00								
2. Log Violent del	.74	.93	.66**	1.00							
3. Log Delinquency in school	.97	.98	.61**	.78**	1.00						
4. Log Substance use	.69	.85	.46**	.56**	.62**	1.00					
5. Attachment to teacher	3.51	1.01	-.22**	-.23**	-.27**	-.25**	1.00				
6. Commitment to school	3.89	.79	-.34**	-.31**	-.37**	-.34**	.49**	1.00			
7. Coercive discipline	2.30	1.10	.31**	.35**	.39**	.31**	-.41**	-.33**	1.00		
8. Inductive discipline	3.54	.97	-.10**	-.11**	-.05*	-.05*	.27**	.24**	.07**	1.00	
9. Victimization in school	.04	.07	.26**	.35**	.33**	.22**	-.19**	-.16**	.27**	-.03	1.00

** Correlation is significant at the 0.01 level (2-tailed)

*Correlation is significant at the 0.05 level (2- tailed)

techniques (Elliot, et al., 1985). Similar items had been used to create inductive and coercive discipline techniques for school for this study. Students were asked how their teachers or administrators generally behaved when students misbehaved. Students responded to each item on a five point scale ranging from 1 (never) to 5 (always). Coercive techniques were measured by 7 items (e.g., use of threats, physical punishment, yelling, etc.). Higher value indicates frequent use of coercive discipline ($\alpha = .91$). Similarly, inductive techniques included a total of 4 items (e.g., moral reasoning, explaining consequences of misbehaviors). Higher value indicates frequent use of inductive discipline ($\alpha = .63$).

Victimization in School

Victimization in school is measured by 11 items. Students were asked in the past year how many times they were the victim of various delinquent behaviors in the school or around the school (theft, sexual abuse, physical abuse, etc.). Frequency of being a victim of a delinquent behavior was indicated on a five point scale ranging from 0 (never) to 4 (four or more times). Higher values indicate more frequent exposure to delinquent behaviors ($\alpha = .76$).

Socio- Demographic Variables

The survey also included questions about students' individual and family characteristics; gender, age, family's average monthly income, parents' education, work status and marital status.

Analysis

Tobit regression model was the basic analytical techniques used in this study. Tobit regression model generally handles the censored data much better than the linear models such as OLS (Os-

good, Finken, & McMorris, 2002; Ousey & Wilcox, 2007, p. 327). Thus, Tobit model has become popular in recent delinquency researches (Felson & Staff, 2006; McCarthy & Hagan, 2001; Sullivan, McGloin, & Piquero, 2008). In this study, for example, 66 % of the students did not report a property related delinquency; 52% of them did not report violent delinquency involvements. Following McCarthy and Hagan (2001) and Ousey and Wilcox (2007), dependent variables (after adding 1) were transformed to natural logarithm forms to address skewness of distribution. Categorical control variables were coded as dummy variables as follows. Being female was coded as 0 and male 1; having parents' education level of primary education or less was coded as 0 and middle school education or above as 1; parents' jobs was coded as 1, unemployed/housewife as 0; and finally, coming from single parents were coded as 0 and both parents as 1. Students' age and average monthly income (log) were included as continuous variables in the models. All analyses were conducted by STATA 9.

Results

Firstly, descriptive statistics were reported. Table 1 included mean and standard deviations of variables along with bivariate correlations of main variables.

Separate Tobit regression analyses were then conducted on different kinds of delinquency involvements (property, violent, delinquency in school and substance use). Tobit regression analyses include both the significant tests of latent variables and marginal effects. The marginal effects were estimated to figure out specific effects of independent variables on observed dependent variables (1 or greater) (Long, 1997).

Table 2 presents results of Tobit regression analyses for property delinquency. The model is statisti-

Table 2.
Estimates for Tobit Models Predicting Property Delinquency

	Logged Property Del	Marginal Effects (observed <1)		
		Logged Property Del		
	B	S.E	b	S.E.
Male	.58	.11***	.07	.013***
Age	-.04	.046	-.01	.005
Log income	.25	.092**	.03	.011**
Father middle school above	-.02	.137	-.002	.017
Mother middle school above	.01	.131	.001	.016
Father employed	-.30	.191	-.04	.027
Mother employed	.01	.112	.001	.013
Intact families	-.26	.173	-.033	.024
Attachment to teacher	-.07	.063	-.01	.007
Commitment to school	-.73	.08***	-.09	.009***
Coercive discipline	.31	.054***	.04	.006***
Inductive discipline	.02	.061	.002	.007
Victimization in school	4.13	.674***	.51	.082***
Intercept	.38	1.09		
Log Likelihood	-1553.95			
AIC	3137			
BIC	3219			
N	1694			
# left censored	534			

* $p < .05$ ** $p < .01$ *** $p < .001$

cally significant, Log Likelihood = - 1553.95, $\chi^2 = 381.39$, $p < .0001$. Gender ($b = .07$, $p < .001$) and log of income ($b = .03$, $p < .01$) were statistically significantly associated with property delinquency. School commitment ($b = -.09$, $p < .001$) exhibited a negative effect on property delinquency. The students who were strongly committed to their schools were less likely to engage in property delinquency. Coercive discipline technique ($b = .04$, $p < .001$) was also significantly associated with an increase in property delinquency, whereas inductive discipline technique was not associated significantly with property delinquency. The victimization in school ($b = .51$, $p < .001$) had also a significantly relation to property delinquency. Students who have reported being a victim in school were significantly more likely to commit property delinquency.

Table 3 presents the results of Tobit regression analyses for violent delinquency. The model is statistically significant, Log Likelihood = -1882.36, $\chi^2 = 433.15$, $p < .0001$. Among the control variables, gender ($b = .04$, $p < .05$) and log of income ($b = .03$, $p < .05$) were significantly associated with violent delinquency. After controlling for the socio-

demographic variables, it was seen that the greater students' commitment to school ($b = -.08$, $p < .001$) was, the lower their involvement in violent delinquency was. On the other hand, both victimization in school ($b = 1.3$, $p < .001$) and coercive discipline technique ($b = .06$, $p < .001$) were related to an increase in violent delinquency.

Results of Tobit regression analysis for delinquency in school are shown in Table 4. The model is statistically significant, Log Likelihood = -2079.19, $\chi^2 = 529.85$, $p < .0001$. Gender ($b = .06$, $p < .001$) and log of income ($b = .05$, $p < .001$) were significantly related with delinquency in school. Also, students whose fathers had middle school and above education levels ($b = .04$, $p < .05$) committed more delinquent acts than other students. Commitment to school ($b = -.13$, $p < .001$) showed a significantly strong negative effect on delinquency in school. Similar to other delinquent acts, both Coercive discipline technique ($b = .09$, $p < .001$) and victimization in school ($b = 1.2$, $p < .001$) were significantly associated with an increase in delinquency in school.

Table 3.
Estimates for Tobit Models Predicting Violent Delinquency

	Marginal Effects (observed <1)			
	Logged Violent Del	Logged Violent Del		
	B	S.E.	b	S.E.
Male	.19	.08**	.04	.017**
Age	-.05	.034	-.01	.007
Log income	.16	.069*	.04	.01*
Father middle school above	.04	.101	-.003	.002
Mother middle school above	.04	.096	.002	.002
Father employed	-.23	.144	-.04	.033
Mother employed	-.07	.083	-.01	.018
Intact families	-.20	.126	-.04	.028
Attachment to teacher	-.001	.048	-.0001	.01
Commitment to school	-.41	.058***	-.08	.012***
Coercive discipline	.30	.041***	.06	.008***
Inductive discipline	-.07	.045	-.02	.009
Victimization in school	5.88	.516***	1.3	.112***
Intercept	.82	.818		
Log Likelihood	-1882.3615			
AIC	3794.723			
BIC	3875.913			
N	1657			
# left censored	770			

* $p < .05$ ** $p < .01$ *** $p < .001$

Finally, Table 5 presents the results of Tobit regression analysis for substance use. The model is statistically significant, Log Likelihood = -1927.65, $\chi^2 = 391.05$, $p < .0001$. The results reveal significant positive effects of age ($b = .03$, $p < .001$), income ($b = .05$, $p < .0001$), and mothers' work status (working mother) ($b = .03$, $p < .05$) on substance use. On the other hand, students who come from intact families ($b = -.07$, $p < .001$) used illegal substance less frequently than students who come from single families. Students with high commitment to school ($b = -.07$, $p < .001$) were less likely to abuse substance. Both coercive discipline technique ($b = .03$, $p < .001$) and victimization in school ($b = .04$, $p < .001$) were positively related to an increase in substance use.

Discussion

The goal of the present research is to study the relationship between delinquency and school related factors. Consistent with theories like Social Bond Theory and results of other previous studies, it was expected that attachment to teacher, commitment to school and the inductive discipline techniques would be negatively associated with delinquency

while coercive discipline techniques and victimization in school would be positively associated with delinquency. Most of our current findings were in line with these expectations: While commitment to school was negatively associated with delinquency, coercive discipline techniques and victimization were positively associated with delinquency. These were consistent with the results of previous works (Felson & Staff, 2006; Heimer, 1997; Hirschi, 1969; Jenkins, 1995; Stewart, 2003). Although the relationships of attachment to teacher and inductive discipline techniques to delinquency resulted as expected, the relationships were not statistically significant.

Regardless of the nature of delinquency, commitment to school seems to inhibit delinquency. This suggests that students who invest time and energy to school to have a better life in the future are less likely engage delinquent acts. In this context, academic success could be related to both commitment to school and delinquency (Crosnoe, 2006; Felson & Staff, 2006). However, the relationships were not investigated thoroughly in this study because academic success can be affected by some other variables that are not included in this study. Nevertheless, there were significant correlations between

Table 4.
Estimates for Tobit Models Predicting Delinquency in School

	Logged Del in School	Marginal Effects (observed <1)		
		Logged Del in School		
	B	S.E.	b	S.E.
Male	.21	.068**	.06	.019**
Age	.03	.029	.001	.008
Log income	.19	.061**	.05	.017**
Father middle school above	.008	.011	.002	.003*
Mother middle school above	.001	.011	.0005	.003
Father employed	-.09	.124	-.03	.035
Mother employed	.02	.073	.01	.021
Intact families	-.16	.109	-.05	.031
Attachment to teacher	-.012	.041	-.003	.011
Commitment to school	-.47	.049***	-.13	.014***
Coercive discipline	.32	.035***	.09	.010***
Inductive discipline	.043	.038	.01	.011
Victimization in school	4.28	.449***	1.21	.129***
Intercept	-.59	.706		
Log Likelihood	-2081.0182			
AIC	4192.036			
BIC	4273.219			
N	1656			
# left censored	967			

* $p < .05$ ** $p < .01$ *** $p < .001$

school success (GPA) and school commitment ($r = .13, p < .001$) and delinquency involvements ($-.7$ to $-.14$). Future studies should take these dynamic relationships into account. Similarly, attachment to teacher was not significant in this study even though previous studies have shown that it was an important factor to inhibit delinquency (Crosnoe et al., 2004). When we look at correlation (see Table 1) patterns, attachment to teacher was significantly related both to delinquency and to commitment to school in predictable ways. These relations suggest that there is a need for a research specifically focusing on the various school bonds variables and dynamic relations among them. Also, the teacher attachment in this study was measured as a global measure. However, students might have different kinds of relations according to teacher they have.

Another important finding revealed that coercive discipline techniques and victimization was related to an increase in delinquent involvements. Even though these findings provided valuable insights to delinquency of students, mechanisms behind the relationships should be explored in order to gain a better understanding of school factors that related to delinquency. For example, coercive discipline techniques and victimization can be considered as

a learning process of delinquency as Social Learning Theories put it (Akers, 1985; Sutherland, 1947). Also, the results could be related to stress or strain for young people's experiences in school through victimization or coercive discipline techniques that put them risk for delinquency as Strain Theories suggest (Agnew, 1992; Cohen, 1955). In this perspective, delinquency could be considered as an adaptation to strain that young people experience in their lives. Coercive discipline and victimization can be the negative life experiences that lead to strain turning into delinquency as a way of dealing with the problems. Therefore, teachers can also play an important role to reduce the stress through solving conflicts among students in more constructive ways (Çukur & Kuru, 2007).

Although socio-demographic variables that related to delinquency were not the focus of the study, some findings were worth to mention. First of all, males were committed more delinquent activities than girls except for the substance use. This is consistent with previous works (Hagan, Gillis, & Simpson, 1985; Heimer, 1996). However, relatively high rates of substance use among girls that comes from the general trend in overall society was an interesting finding that should be investigated fur-

Table 5.
Estimates for Tobit Models Predicting Substance Use

	Marginal Effects (observed <1)			
	Logged Substance use		Logged Substance use	
	b	S.E.	b	S.E.
Male	.01	.082	.002	.012
Age	.17	.035***	.03	.005***
Log income	.36	.071***	.05	.011***
Father middle school above	.12	.010	.09	.016
Mother middle school above	.13	.010	.03	.015
Father employed	-.13	.15	-.02	.023
Mother employed	.18	.085*	.03	.013*
Intact families	-.42	.130***	-.06	.021***
Attachment to teacher	-.06	.049	-.01	.007
Commitment to school	-.48	.06***	-.07	.009***
Coercive discipline	.24	.042***	.03	.006***
Inductive discipline	-.02	.046	-.003	.007
Victimization in school	2.77	.538***	.43	.084***
Intercept	-3.89	.851***		
Log Likelihood	-1927.651			
AIC	3885.302			
BIC	3967.044			
N	1719			
# left censored	760			

* $p < .05$ ** $p < .01$ *** $p < .001$

ther. Also, income was positively associated with delinquency. However, only focusing on household income can provide very limited views about the link between SES and delinquency. Previous studies have also shown mixed results related to the effects of income on delinquency (Gutierrez & Shoemaker, 2008; Hagan, Simpson & Gills, 1987; Heimer 1997; Ring & Svensson, 2007).

This study has some limitations and these findings should be assessed within these limitations. First of all, this study only focused on individual level school variables. However, studies have shown that structural level factors of school are important factors to understand delinquency among students. For example, number of students, average class size, and numbers of teachers per class along with average income level of neighborhoods and crime rates of neighborhoods were found to be related to delinquency of students (Welsh, 2001; Welsh et al., 1999). Besides the school factors, there are other important factors such as the families, peers, neighborhoods that should be considered to understand delinquency, some of which can interact with the effects of school-related delinquency processes. Secondly, the design of this study is a cross-sectional design in which establishing causal

interference could be problematic. Even though the directions of the relationship among variables were based on some theoretical frameworks and previous studies, the relationship between school factors and delinquency can be reciprocal. For example, victimization in school would increase delinquent involvements, but at first place delinquent students could be more likely to be the victims of various delinquent acts. Finally, delinquent involvements along with other variables such teachers' discipline techniques were only assessed from the students' self-reports. If delinquency involvement of students could be supported by other independent sources such as the school records or reports from teachers and parents, possible measurement bias could be minimized.

Overall, most of the findings of the current researches in Turkish context, confirmed the important role of school in delinquency process (Battisch & Hom, 1997; Payne, 2004; Welsh et al., 2000). The present study's findings become specifically important when one considers how policy makers or school administrators in Turkey currently conceptualize or address the ever increasing and relatively new problems of delinquency among students. These findings suggest that only increasing safety

measures or penalties as basic policies against delinquency have limited success to solve the social problems. Policy makers should address other important issues such as school commitment, victimization and effectiveness of frequently used coercive discipline methods to deal with increasing delinquency rates in school.

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